MAX®

CADLINER

CD-750

OPERATOR'S MANUAL

FOREWORD

We thank you for purchasing the CADLINER CD-750. This precision instrument will help you improve the quality of your lettering and save your time.

With proper handling, your CADLINER CD-750 will give you years of trouble-free service. Its operation is simple and logical and easily mastered.

To get the most from your CADLINER CD-750, please take the time to read this handbook.

So, let's get started...

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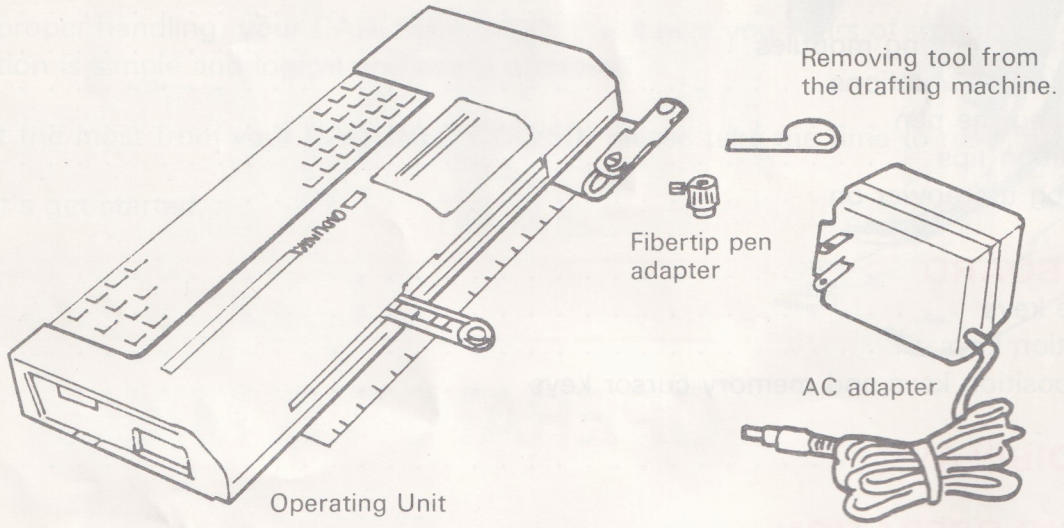
1. PREPARING FOR USE

1.1 Unpacking



In the package, you will find the AC adapter, the operating unit with the operators handbook, fibertip pen adapter and the removing tool from the drafting machine.

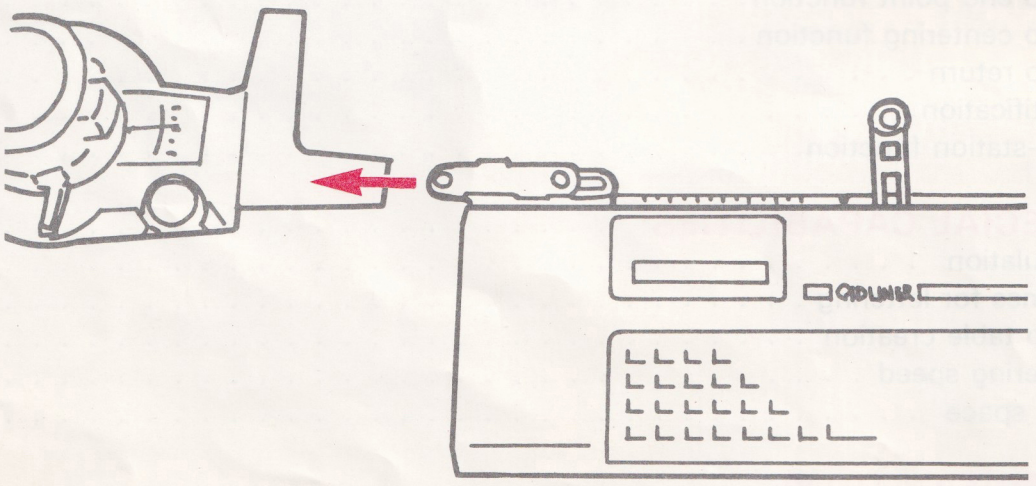
Unpack the parts carefully and place the operating unit on a level working surface. Place the AC adapter so that cord will not interfere with the operation of the drafting table or the drafting machine.

1.2 Set up

1) Attach to the drafing machine.

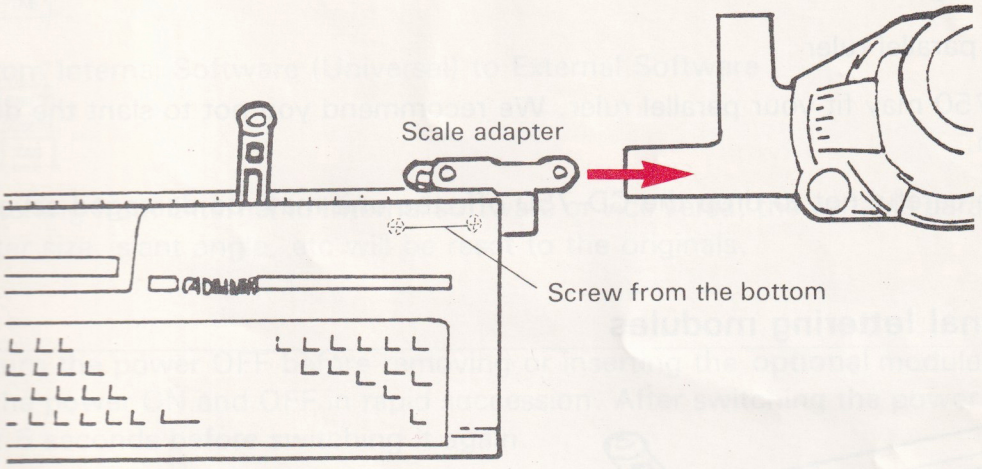
If used with a slanted drafting table, the CADLINER CD-750 should be mounted to the drafting machine. Prior to attaching the unit to the drafting machine, place the drafting table in the horizontal position. Remove the horizontal scale from the drafting machine and install the CADLINER CD-750.

a. Right-handed drafting machine



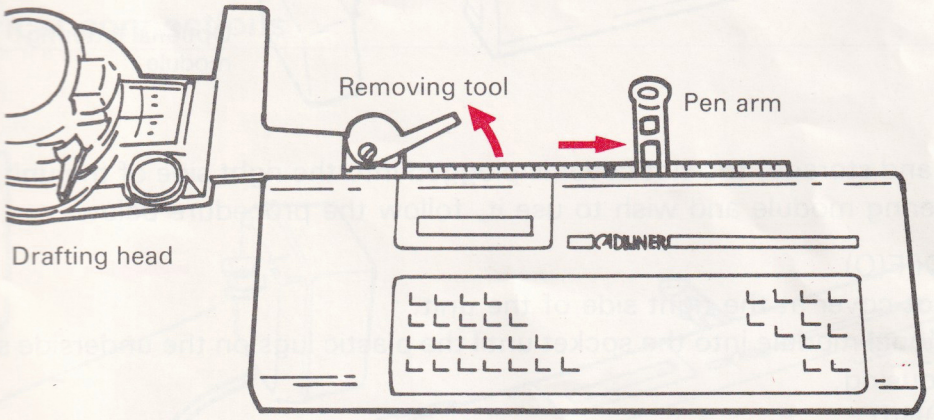
Slowly return the drafting table to the desired position, making sure that the CADLINER CD-750 is secured properly to the drafting machine.

b. Left-handed drafting machine
Please remove the scale adapter, then screw on the right hand side of the unit as illustrated below.

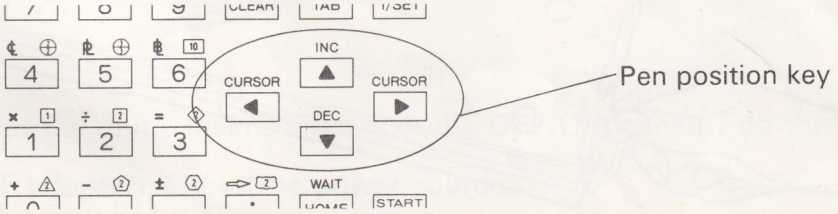


c. Remove the unit from the drafting machine.

Use the removing tool to turn unclockwise very slowly.



Caution: * Prior to remove the unit from the drafting machine, please move the pen arm by [▶] pen position key not to hit the pen arm.



* When you rotate the drafting head clockwise, please hold the unit by hand. Otherwise the unit may slip off from the drafting machine.

2) On the flat table

You may use the CD-750 on the flat table independently.

We recommend you to tape down the drawing material on the table.

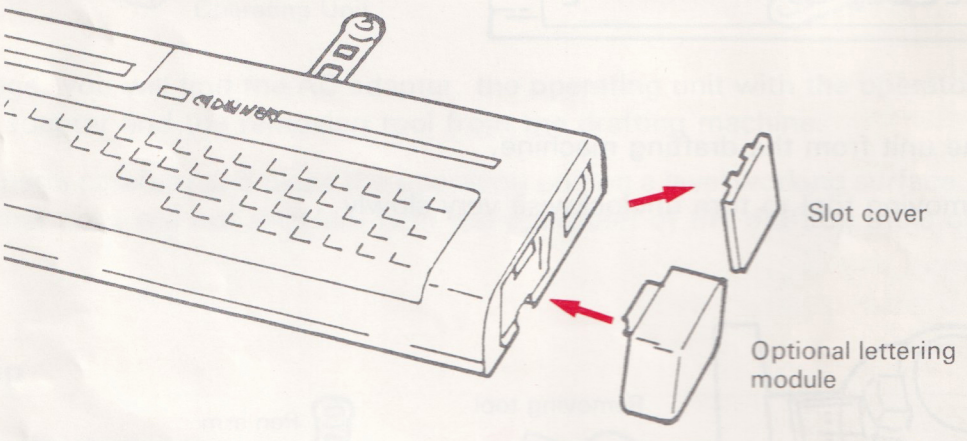
Caution: Do not move the pen arm by hand. Excessive pressure on the pen arm may cause damage.

3) With the parallel ruler

The CD-750 may fit your parallel ruler. We recommend you not to slant the drafting table too much.

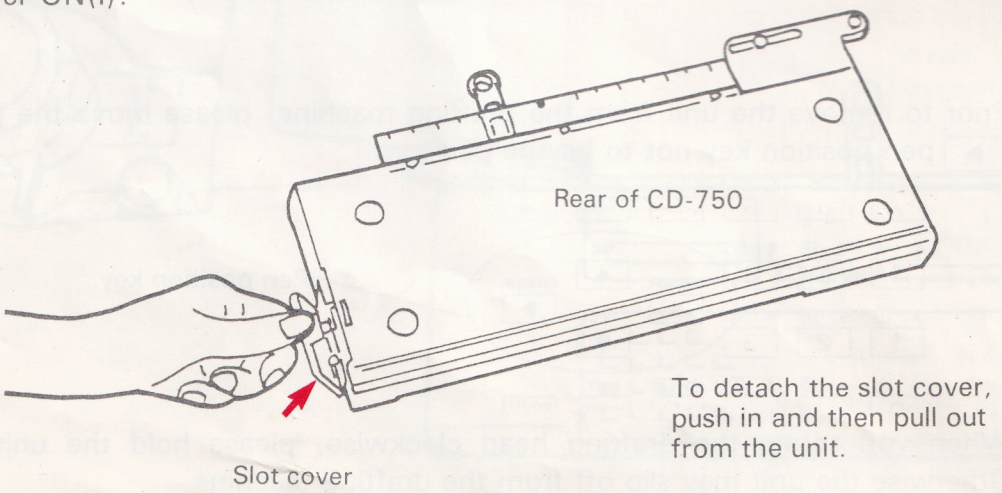
Caution: Be careful not to drop the CD-750 off, the unit may be damaged severely.

1.3 Optional lettering modules



For normal use and storage, the slot cover is plugged into the right side of the unit, If you have an optional lettering module and wish to use it, follow the procedure below.

①Turn power OFF(O).
②Detach the slot cover at the right side of the unit.
③Insert the optional module into the socket until the plastic lugs on the underside snap into the slots in the housing.
④Turn power ON(I).



1) External Software (Optional module)
When the cassette has been inserted, the external software with a different letter style will be automatically selected after turning power ON.

2) Select Internal Software (Universal style has been built in the unit)
① Press SHIFT
② Press CASSETTE TAB

3) Switch from Internal Software (Universal) to External Software
① Press SHIFT
② Press CASSETTE TAB

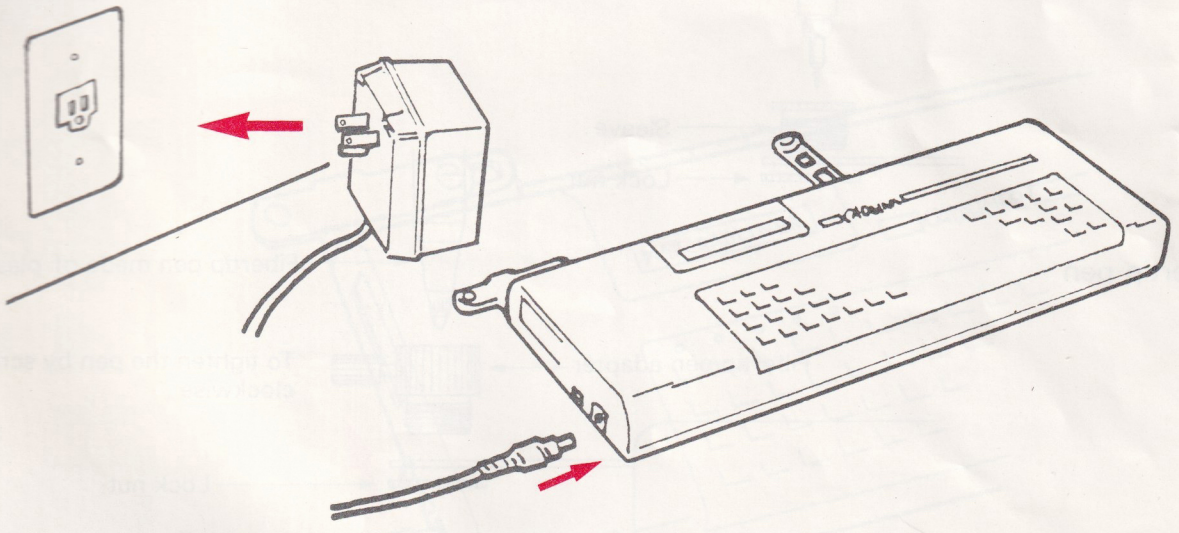
* When switching from External to Internal software or vice versa, the variable parameters such as character size, slant angle, etc will be reset to the originals.

Caution!

Be sure to turn the power OFF before removing or inserting the optional module!
Never turn the power ON and OFF in rapid succession. After switching the power ON or OFF, wait at least 5 seconds before switching it again.

You may destroy the memory information, unless you observe the above procedures.

1.4 Electrical connections



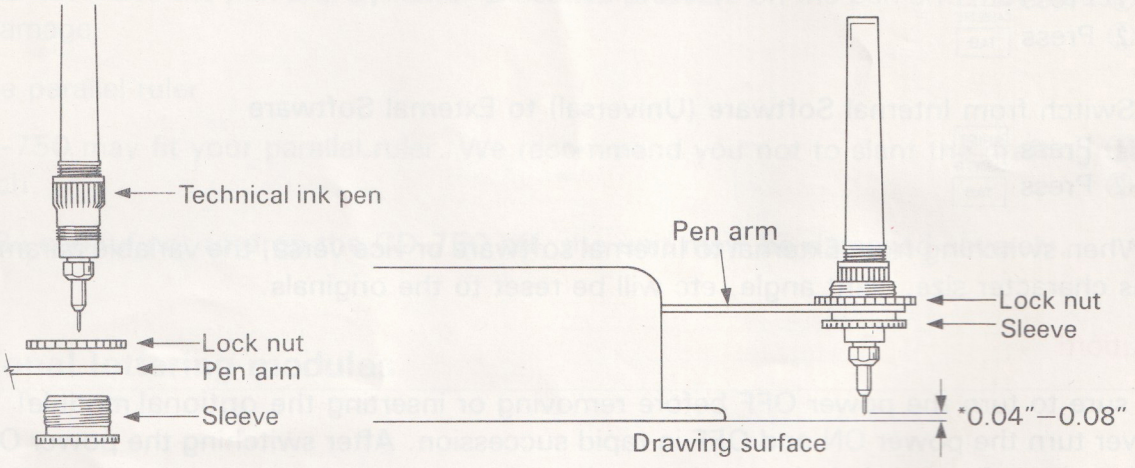
After ensuring that the unit's main switch is in the OFF(O) position, do the following:

①Connect the AC adapter plug to the power source.
②Make sure the connector of the AC adapter is secured to the operating unit.

1.5 Installing the pen

The final preparatory step is to install a pen.

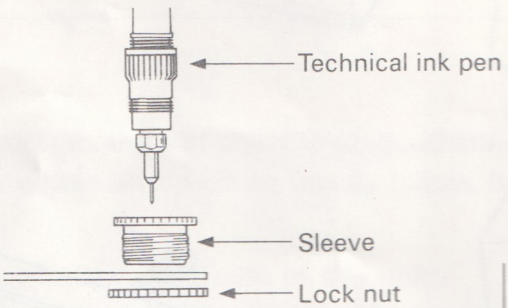
1)Technical ink pen



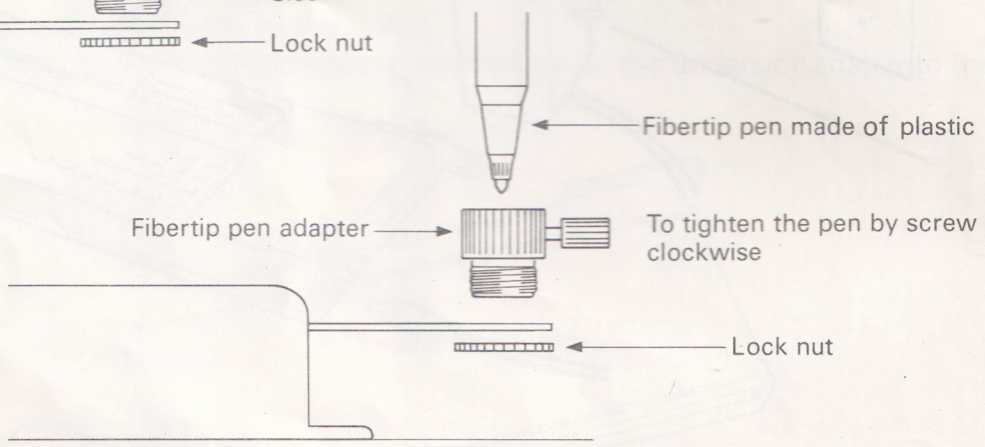
The pen adapter, consisting of a threaded sleeve and a lock nut, is designed for a regular technical pen. Screw the pen (without the barrel) all the way into the sleeve, then loosen the lock nut and turn the sleeve with the pen until the tip of the pen is within 0.04" to 0.08" of the drawing surface. Secure the sleeve in this position with the lock nut.

* The recommendable distance between 0.04" and 0.08", you may use the removing tool to put it between the drawing surface and the pen point.

To adjust the distance between the drawing surface and pen point properly, you may try to install the pen as illustlated below.



2)Fibertip pen



Install the fibertip pen into the adapter similar to the technical ink pen, then adjust the pen height by tightening the screw clockwise.

Caution: * Please do not use heavy pen made of metal, the unit may not work properly.
* When installing or removing the pen, please be careful not to damage the pen arm.

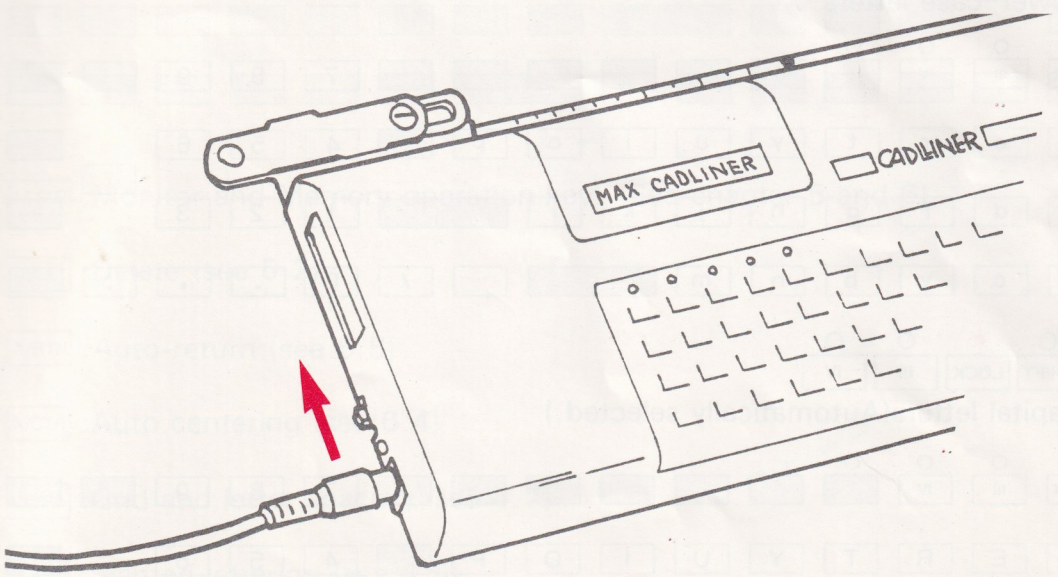
1.6 Operation tips

Preparation is now complete. Before you turn on the power, here are a few important notes:

* Make sure that the unit has reached room temperature before use. Temperatures below 41°F and above 95°F can cause malfunctions of the electronic components.
* Protect the unit from direct sunlight and don't place it near heating equipment.
* Avoid locations with abrupt temperature changes, high humidity, or dust.
* Never move the writing arm by hand and never touch the writing arm while an operation is in progress.
* Never disconnect any electrical connection while an operation is in progress.
* Never attempt to open the unit. To clean the housing, wipe it with a clean, dry cloth.
* Do not use a wet cloth or a cloth soaked in alcohol, benzene, paint thinner, or any other volatile liquid.
* Your CADLINER CD-750 is a precision instrument. All precautions should be taken to insure that the unit is protected from severe impact.

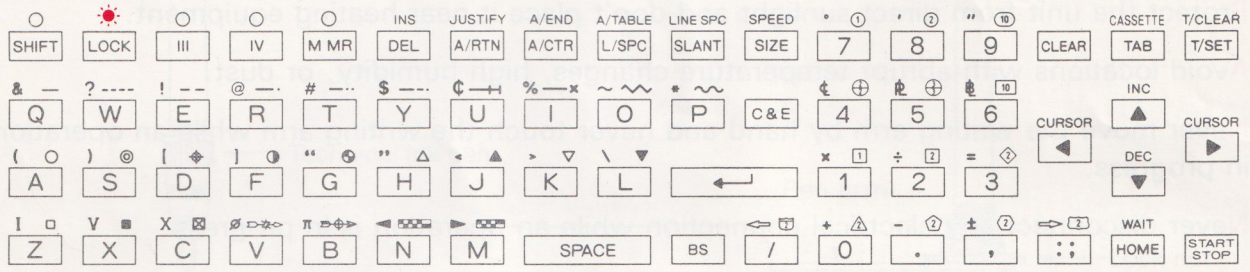
1.7 Turning the power on

Move the main switch on the unit to the ON position (I). The pen arm moves out and brings the pen into the home position for the selected letter size. When the power is turned on, a letter size of 0.14" is automatically selected. The LC (liquid crystal) displays 'MAX CADLINER'. The unit is now ready to accept input through the keyboard.



2. KEYBOARD

The keyboard consists of writing keys and function keys. The light gray keys are the writing keys, which have four modes controlled by the mode keys [SHIFT], [LOCK], [III] and [IV]. When the power is turned on, the upper-case mode is automatically selected, which is indicated by illuminated green LED above [LOCK] key.


SHIFT LOCK III IV M MR INS DEL JUSTIFY A/RTN A/END A/CTR A/TABLE L/SPC LINE SPC SLANT SPEED SIZE CLEAR CASSETTE TAB T/CLEAR T/SET
Q W E R T Y U I O P C&E
A S D F G H J K L
Z X C V B N M SPACE BS
7 8 9 4 5 6 1 2 3 0 . ,
CURSOR INC DEC CURSOR
WAIT HOME START STOP

2.1 Mode keys

The basic version of the CD−750 contains the standard universal font.

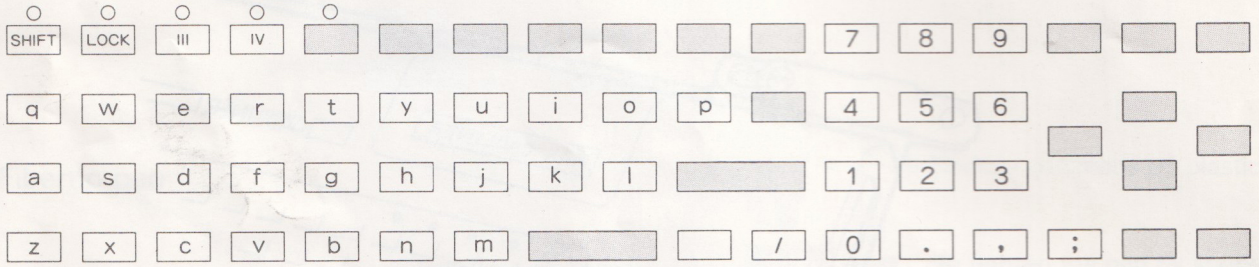
The four mode keys are located at the top left of the keyboard. The green LED's above the mode keys indicate the active mode(s). Depressing a mode key will cause its LED to light up.

The shift mode key is effective for single keystroke only. When the shift mode key depressed, the green LED above the key will light up until the keystroke is entered; then the shift mode will be released.

In the case of modes [LOCK], [III], and [IV], the selected mode remains in effect until overridden. Pressing the key for a new mode will cause the previous mode to be cancelled and the new mode to take effect. Pressing the key for the mode that is already in effect(e.g.pressing [III] when mode [III] is already operative) will cause that mode to be cancelled.

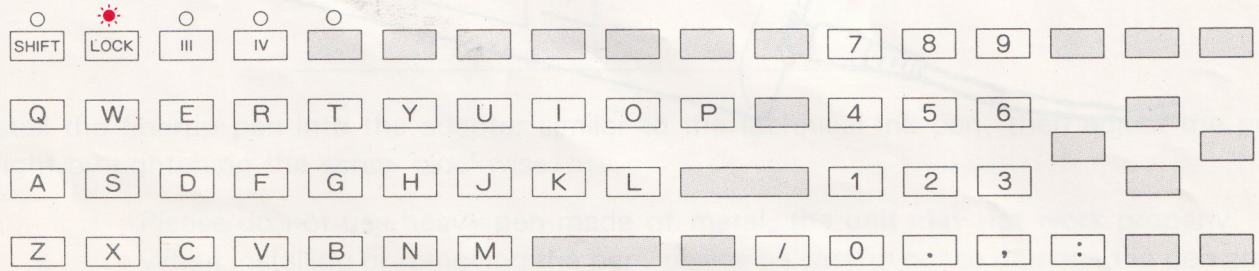
Mode I : [SHIFT] [LOCK] [III] [IV]

Lower-case letters



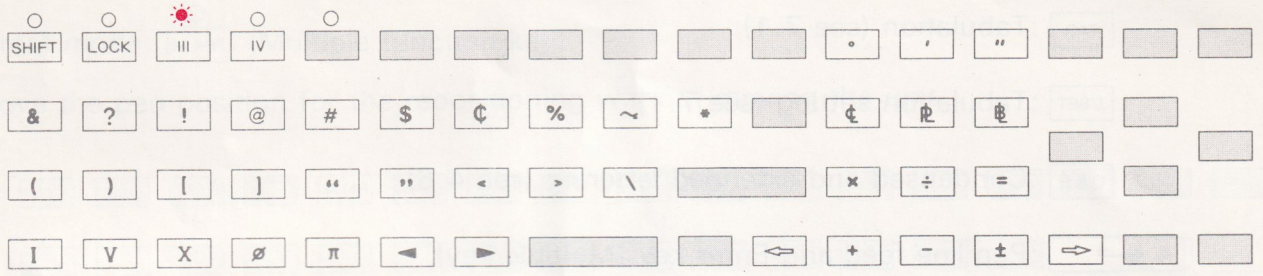
Mode II : [SHIFT] [LOCK] [III] [IV]

Capital letters(Automatically selected.)



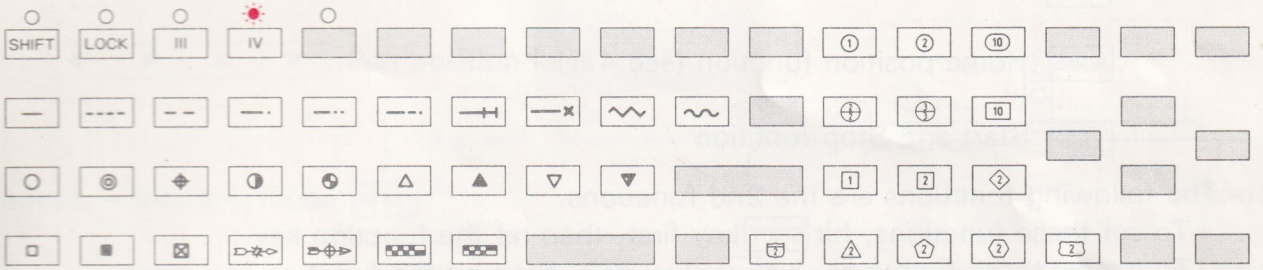
Mode III: SHIFT LOCK III IV

(Yellow key) Symbols



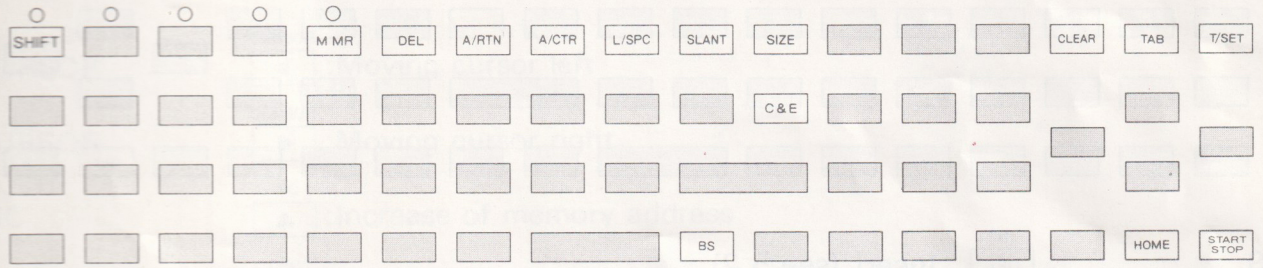
Mode IV: SHIFT LOCK III IV

(Green key) Line varieties, frames for lettering, graphic symbols



2.2 Function keys

SHIFT OFF: SHIFT



M MR :Monitor and Memory operation key. (See chapter 5 and 6)

DEL :Delete (see 5.2)

A/RTN :Auto-return (see 6.5)

A/CTR :Auto centering (see 6.4)

L/SPC :Grid and letter spacing (see 4.7)

SLANT :Slanted lettering (see 4.5)

SIZE :Letter size (see 4.4)

[CLEAR] :Clear function

[TAB] :Tabulation (see 7.1)

[T/SET] :Tabulation setting (see 7.1)

[C&E] :Condensed and extended lettering (see 4.6)

[↵] :Pen line feed and Enter key (Multiple key)

[SPACE] :Space

[BS] :Backspace (see 4.8)

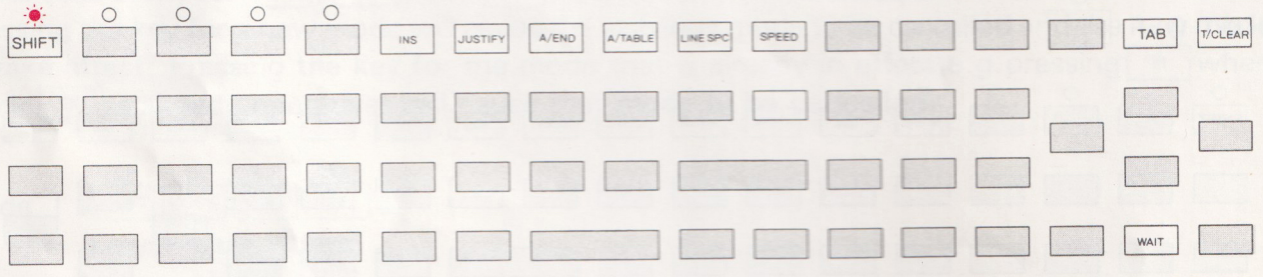
[HOME] :Home position function (see 4.1)

[START STOP] :Start and Stop function

Note:The following functions are the 2nd functions.

* To set these functions, hit [SHIFT] key first, then hit the function key.
* To cancel these functions, hit [SHIFT] key first, then hit the function key again.

SHIFT ON: [SHIFT]

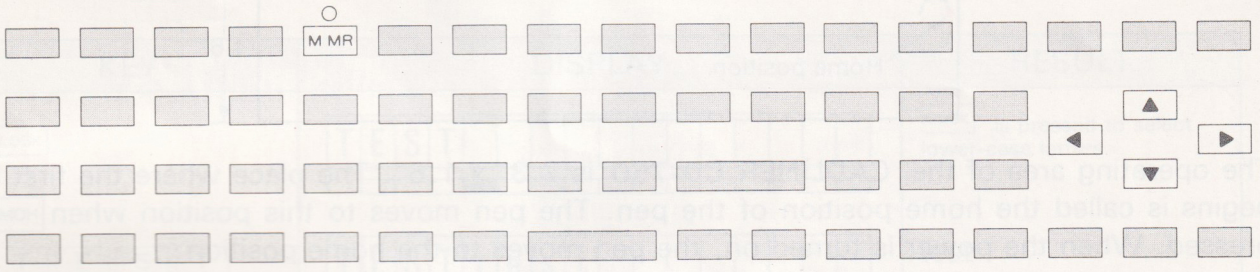


INS	INS [DEL]	:Insert (see 5.2)
JUSTIFY	JUSTIFY [A/RTN]	:Justification (see 6.6)
A END	A/END [A/CTR]	:Auto end point (see 6.3)
LINE SPC	LINE SPC [SLANT]	:Line spacing (see 7.5)
SPEED	SPEED [SIZE]	:Lettering speed change (see 7.4)
T CLEAR	T/CLEAR [T/SET]	:Tabulation clearing (see 7.1)
WAIT	WAIT [HOME]	:Pen-station (see 6.7)
A/TABLE	A/TABLE [L/SPC]	:Auto table creation (see 7.3)
CASSETTE	CASSETTE [TAB]	:Cassette changing (see 1.3)

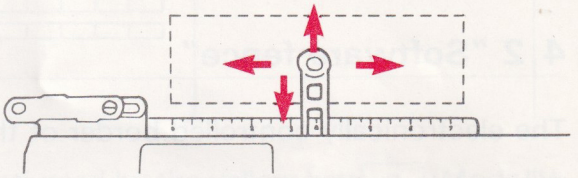
2.3 Pen position keys and memory cursor keys

Direct mode: ○ M MR (Multiple function key)

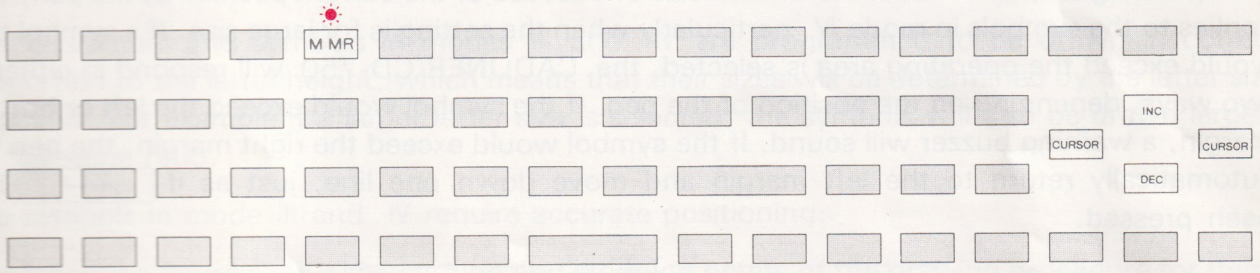
Move the pen position for the repositioning without moving the unit.



◀ ▶ ▲ ▼ :Pen position keys



Monitor or Memory mode: ☀ M MR



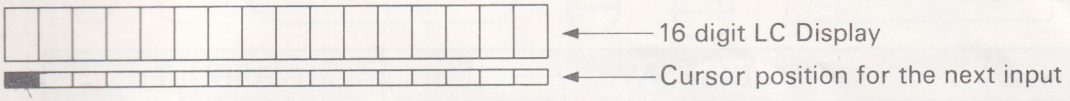
CURSOR CURSOR ◀ :Moving cursor left

CURSOR CURSOR ▶ :Moving cursor right

INC INC ▲ :Increase of memory address

DEC DEC ▼ :Decrease of memory address

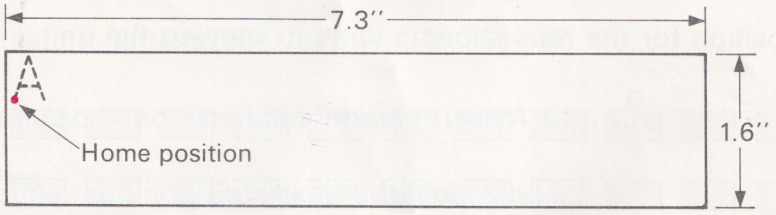
A 16-digit LC Display is provided to show entries and operating conditions.



After all sixteen places have been filled, the characters that were entered first will move out of the display to the left to accommodate the recent entry. The latest entry will always appear in the 15th place.

4. BASIC OPERATION

4.1 Operating area

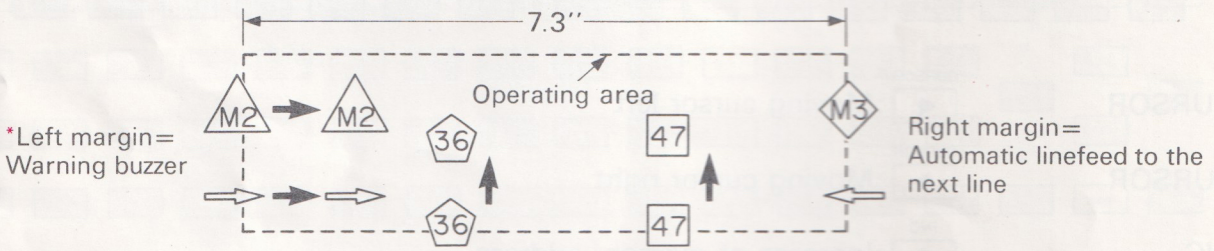


The operating area of the CADLINER CD-750 is 7.3" x 1.6". The place where the first line begins is called the home position of the pen. The pen moves to this position when [HOME] is pressed. When the power is turned on, the pen moves to the home position.

4.2 "Software fence"

The electronically controlled border of the operating area is called the "software fence".

This software fence prevents the pen from executing keystrokes when symbols would exceed the operating area either because of their size or because of the current position of the pen. This applies to the symbols in mode Ⅳ, particularly when the setting is for large size. If a symbol that would exceed the operating area is selected, the CADLINER CD-750 will respond in either of two ways, depending on the position of the pen. If the symbol would exceed the left or bottom margin, a warning buzzer will sound. If the symbol would exceed the right margin, the pen will automatically return to the left margin and move down one line, just as if [↵] had been pressed.



* Move the pen position inside of the oprating area by [▶] [▲] pen position keys.

Note: Please check the starting and end point of the symbols illustrated page 13.

4.3 Direct mode

In the direct mode every keystroke is executed immediately by the pen and appears in the display.

To begin, key in the word "TEST".

KEY	DISPLAY	RESULT
[T] [E] [S] [T]	T E S T	TEST

You will observe that every key you press appears in the display, and that the letters are drawn immediately.

The cursor moves to the next free place in the display after each keystroke.

Now, press [LOCK] and again draw "test".

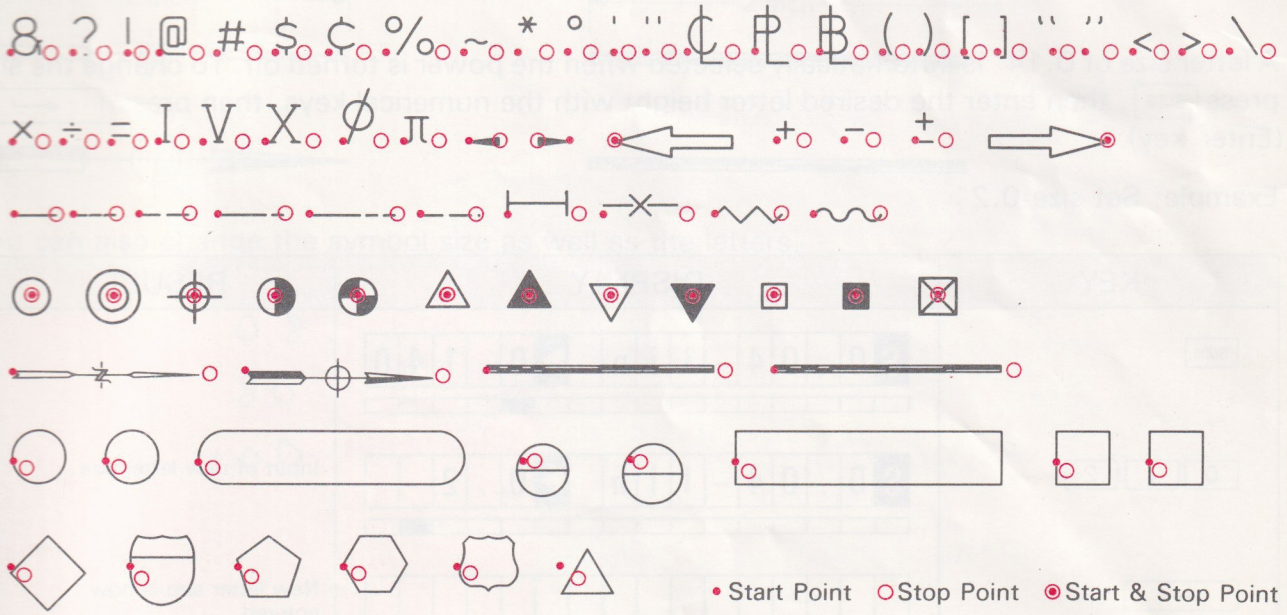
KEY	DISPLAY	RESULT
[LOCK]	TEST	[LOCK] is pressed to select lower-case letters.
[T] [E] [S] [T]	TESTtest	test

The characters shown in yellow on the keyboard are activated by the yellow key [III] (Mode III).
The symbols shown in green on the keyboard are activated by the green key [IV] (Mode IV).

The characters and symbols in modes III and IV are programmed to be drawn in correct proportion to the letter height, which means that their sizes will be determined by the letter size selection. For example if a larger letter size is selected, the symbols will also be drawn larger, by the same ratio.

The symbols in mode III and IV require accurate positioning.

The following figure shows the starting and stopping points of the drawing procedure for these symbols. Before the key for the desired symbols is pressed, the pen should be in the proper position.



When the above frame is drawn, the pen stops in the correct position to enter the letter to be enclosed. The frame is drawn first, then the certain numbers of characters will be drawn inside.

4.4 Letter size

You can change the letter size from 0.04" (1.0mm) to 1.0" (25.4mm) in 0.005" (0.1mm) increments by [SIZE] key.

RECOMMENDED PEN SIZES FOR LETTERING

Lettering Size		Pen Size	
Inches(Metric)		Standard(Metric)	
0.04 in.	(1.0mm)	000000	(0.13mm)
0.06 in.	(1.5mm)	0000	(0.18mm)
0.08 in.	(2.0mm)	000	(0.25mm)
0.10 in.	(2.5mm)	00	(0.30mm)
0.120in.	(3.0mm)	0	(0.35mm)
0.140in.	(3.5mm)	0	(0.35mm)
0.175in.	(4.5mm)	1	(0.50mm)
0.20 in.	(5.0mm)	1	(0.50mm)
0.240in.	(6.0mm)	2	(0.60mm)
0.290in.	(7.5mm)	2 1/2	(0.70mm)
0.350in.	(9.0mm)	3	(0.80mm)
0.425in.	(10.0mm)	3 1/2	(1.00mm)
0.500in.	(12.5mm)	4	(1.20mm)
0.700in.	(18.0mm)	6	(1.40mm)
1.000in.	(25.0mm)	7	(2.00mm)

A letter size of 0.14" is automatically selected when the power is turned on. To change the size, press [SIZE], then enter the desired letter height with the numerical keys, then press [↵] (Enter key).

Example: Set size 0.2"

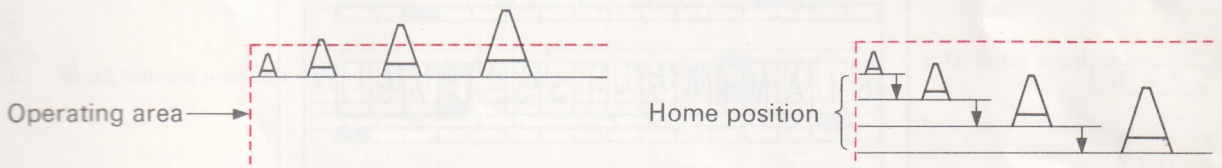
KEY	DISPLAY	RESULT
[SIZE]	S0.04-lin ▶0.140	
[0] [.] [2]	S0.04-lin ▶0.2	Input of new letter size.
[↵]		New letter size is now entered.

Example: Convert to Inch to Metric size.

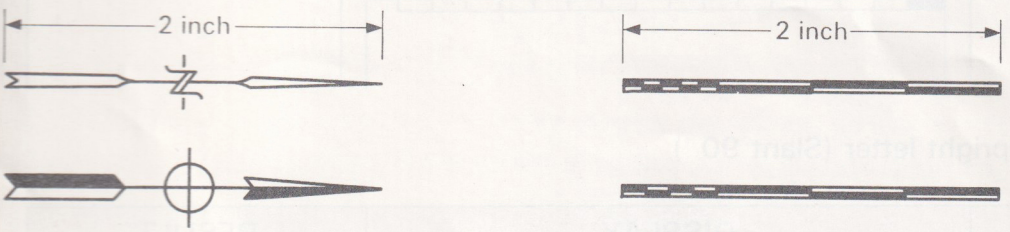
KEY	DISPLAY	RESULT
SIZE	S 0.04-1in ▶0.140	Inch size is indicated.
M 2 . 5	S 1-25.4mm ▶2.5	Metric size is indicated.
↵		New metric size is now entered.

Pressing SIZE and 1 changes the mode back to inches.

Note: If you switch to a larger letter size when the pen is on the uppermost line, you must then press HOME, or else the operating area will be insufficient at the top to write larger letters. When HOME is pressed, the pen moves down to the home position for the selected letter size.



The following symbols will be drawn at size 0.14″.



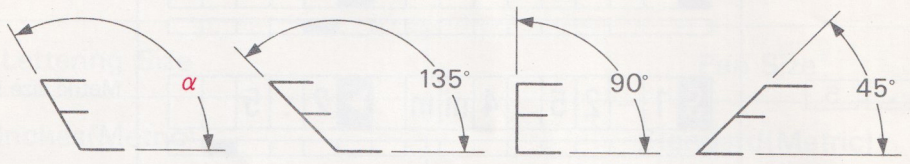
You can also change the symbol size as well as the letters.

SIZE 0.8
SLANT 80
C&E 100
} FOR 9 LETTERS

GRID SPACE

4.5 Slanted lettering

To select the slanted lettering function, press [SLANT] . The angle " α" is selectable in the range of 45°-135°, by 1° increments.



Note: When you select back slanted lettering from 91° to 135°, please press [HOME], then hit characters.

Some of the symbols in modes III and IV are always drawn upright regardless of whether slanted lettering is in effect.

Example: Slant 75 ° letter.

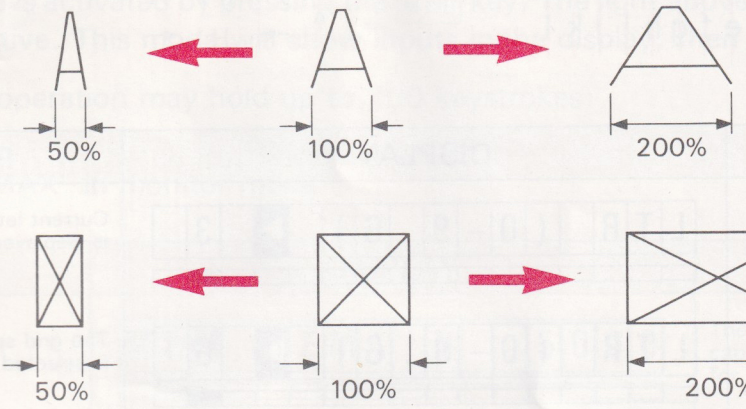
KEY	DISPLAY	RESULT
[SLANT]	SLANT45-135°▶90	Current angle is displayed.
[7] [5]	SLANT45-135°▶75	Set new slanted angle.
[↵]		Angle "75°" is entered.

Example: Reset the upright letter (Slant 90 °)

KEY	DISPLAY	RESULT
[SLANT]	SLANT45-135°▶75	Current slanted angle is displayed.
[CLEAR] ([9] [0])	SLANT45-135°▶90	
[↵]		The upright letter is now reset.

4.6 Condensed and extended lettering

The width of the letters, numerals and symbols can be varied within 50% to 200% of the normal width(100%). If the letter width is changed, the letter space will be changed in the same ratio.



Example: Condense letter width 50% of the normal.

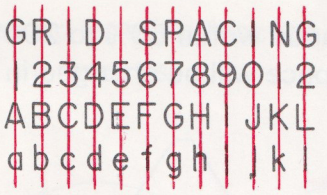
KEY	DISPLAY	RESULT
C&E	WIDTH50-200%▶100	The current letter width is displayed.
5 0	WIDTH50-200%▶50	A 50% letter width is chosen.
↵		The 50% letter width is entered

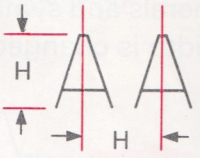
4.7 Grid and letter space selection

For the creation of tables and columns, characters may be drawn with constant spacing using the grid function.

The distance between the centers of two letters will be equal to the letter height. After each line feed [↵], the characters will be aligned in columns.

Example: Grid space

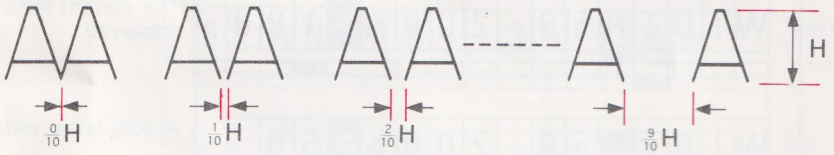




H: letter size

KEY	DISPLAY	RESULT
L/SPC	LTR (0-9,G) ▶ 3	Current letter spece is displayed.
G	LTR (0-9,G) ▶ G	The grid space is selected.
↵		The grid space is entered.

Note: Nnmbers 0-9 may be selected to set the letter spacing from 0/10 H to 9/10 H.



4.8 Back-space

The unit always" remembers" the last 20 characters.
If any of these characters have been incompletely drawn because of a drying of the ink in the pen, the pen may be moved back to the starting points of the incomplete characters to overdraw. This is accomplished by repeatedly pressing the BS key until the pen reaches the desired position.

Note: This function is available on "Direct mode" only. In case of "Monitor mode" or "Memory mode", the pen returns to the start point of the first character of programmed characters in these modes.

Example: YES

KEY	DISPLAY	RESULT
Y E S	YES	YES Letter Y and E are incompltely drawn.
BS BS BS	YES	The pen moves back to the start point of letter"Y".
Y E S	YESYS	YES Letter "YE"are redrawn.

5.MONITOR OPERATION

5.1 Input

The monitor mode is activated by pressing the [M MR] key. The light above the key indicates when the function is active. This mode will show inputs in the display, then print by pressing [START STOP]

A single monitor operation may hold up to 200 keystrokes:

Example: Input "MAX" in monitor mode.

KEY	DISPLAY	RESULT
[M MR]	MEM.REMAIN 5000	The remaining memory capacity is displayed for about 2 seconds.
	◀▶	* Maximum capacity for the monitor mode is 200 Keystrokes.
[M] [A] [X]	◀▶MAX	Input
[START STOP]	◀▶MAX	Print MAX.

If [START STOP] is pressed, and the contents of the display can not be printed because the pen is located too far to the right in the operational area, or because the letter size currently selected is too large, then a warning signal will sound, and the displayed characters will flash in the display.

If this occurs, you should either move the pen to the left by [HOME] key select a smaller letter size, or divide the monitor information in the several lines by [↵] line-feed key.

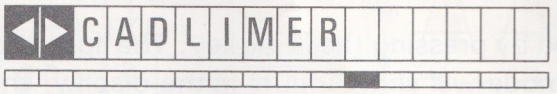
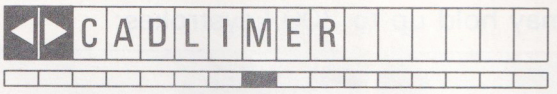
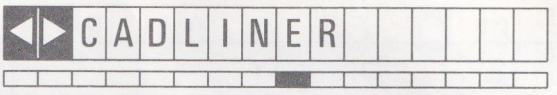
Note: If the monitor function is canceled by pressing [M MR] again (or you enter into memory mode.) characters held by the monitor mode are cleared.

5.2 Correction

Input errors may be corrected as follows : Use the cursor move keys [CURSOR ◀] and [CURSOR ▶] to bring the cursor below the erroneous input in the display, then overwrite with the correct input.

With the use of [INS DEL], you may delete inputs, one at time. Hit [SHIFT] first, then press [INS DEL] allows you to insert keystrokes.

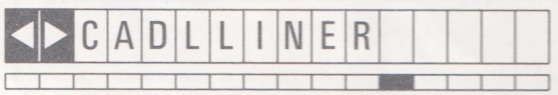
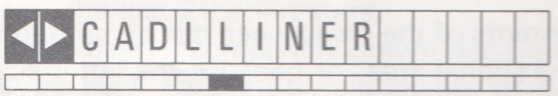
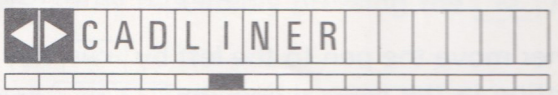
Example : Correct "M" to"N". (CADLINER)

KEY	DISPLAY	RESULT
C A ---------- ---------- E R		An erroneous input "M"
CURSOR CURSOR CURSOR ◀ ◀ ◀		The cursor is moved below the incorrect input.
N		The error is corrected.

Example : Delete letter"L". (CADLINER)

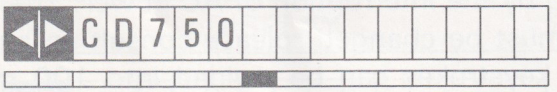
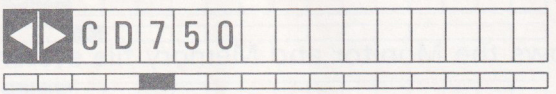
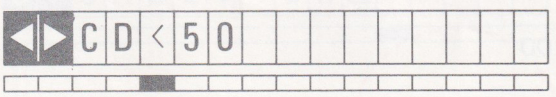
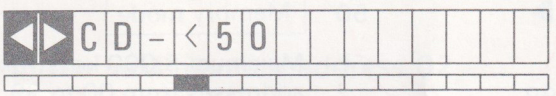
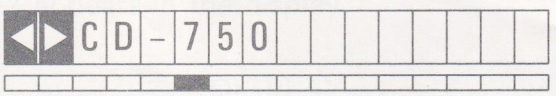
Correction by deletion can be made by the following procedure :

When a character in the display is deleted using DEL, characters to the right of it move one place to the left, so that the deleted space is filled in.

KEY	DISPLAY	RESULT
C A ---------- ---------- E R		An erreneous input "L".
CURSOR CURSOR CURSOR CURSOR ◀ ◀ ◀ ◀ CURSOR ◀		The cursor is moved below the incorrect input.
DEL		The error is deleted.

Correct by insertion can be made by following procedure :
When SHIFT , then INS DEL is pressed to allow character insert, the character immediately above the cursor will begin to blink. Inserted characters will be filled in to the left of this blinking character. When you have finished insertion, cancel the insertion mode by again pressing SHIFT , then INS DEL .

Example : Insert symbol "−". (CD-750)

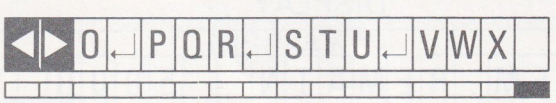
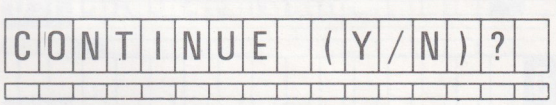
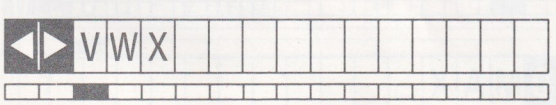
KEY	DISPLAY	RESULT
C D ---------- ---------- 5 0		An erroneous input.
CURSOR CURSOR CURSOR ◀ ◀ ◀		The cursor is moved below the incorrect input.
INS SHIFT , DEL		The insert mode is selected.
- ② III .		The missing symbol is inserted.
INS SHIFT , DEL		The insert mode is canceled.

You can return the pen to the start point of the first character of programmed characters by pressing BS key.

5.3 Waiting function

During a monitor or memory operation, the automatic waiting function prevents the unit from writing twice on the same line. If this is about to occur, a message is displayed asking whether to continue (Y/N).

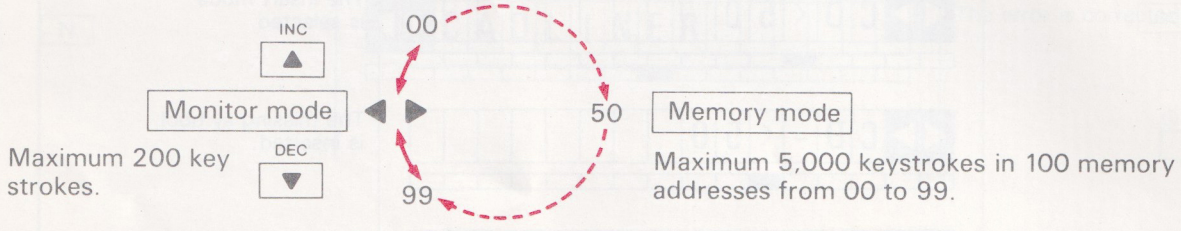
Correctly re-position the pen, then continue operation by pressing Y . Or, press N if you do not wish to continue.

KEY	DISPLAY	RESULT
A B C ------ ---------- W X		Monitor input.
START STOP		ABC DEF GHI JKL MNO PQR STU Only this position is printed out with START STOP . The pen returns to first line and waits.
		VWX Re-position the pen and press Y .

6. MEMORY OPERATION

Total memory capacity is 5,000 keystrokes. The data is stored in the battery backed up memory and are not affected by the interruption of AC power. The battery has a life of about 3 years. When the battery must be changed, please consult an authorized dealer. The total memory capacity of 5,000 keystrokes can be divided into 100 memory addresses for the different memory infomation.

The following illustration shows the Monitor and Memory file system of the CD-750.



6.1 Input

The memory function is activated by pressing the [M MR] key. The light above the key indicates when the function is active. When the function is activated, the amount of remaining available memory will be displayed for a few seconds. After that, the display will change to indicate " ◀ ▶ " (monitor mode).

To make inputs into memory, press [▲], or else specify the desired address by using numerical keys. (If you do not specify an address, the lowest available address will be automatically selected. Then move the cursor to the first free place in the display, and proceed to input.

You may change the address in which to input data by entering a new address number, by scanning using [INC ▲] or [DEC ▼], or by entering the desired address by moving the cursor to the number.

Example: Input "MAX" in Memory address 00.

KEY	DISPLAY	RESULT
M MR	MEM.REMAIN 5000	Available memory is displayed for about 2 seconds.
	◀▶	Monitor mode
INC ▲	00	Memory 00 is ready for input.
M A X SPACE	00MAX␣	

Example: Input "CADLINER" in the next memory address 01.

To select the next free memory address, press [INC ▲]. 01 appears in the display.

KEY	DISPLAY	RESULT
[INC ▲] [C] [A] ---------- ---------- [E] [R] [SPACE]	01 01CADLINER␣	Memory 01 is ready for input.

Example: Input "CD-750" in the next memory address 02.

Press [INC ▲] once again. 02 appears in the display.

KEY	DISPLAY	RESULT
[INC ▲] [C] [D] ---------- ---------- [5] [0]	02 02CD-750	Memory 02 is ready for input.

6.2 Recall

Recalls from memory may be performed as follows.

Example: Recall the memory addresses by [INC ▲] key.

KEY	DISPLAY	RESULT
[M MR] [INC ▲]	00MAX␣	Memory 00 is recalled.
[INC ▲]	01CADLINER␣	Memory 01 is recalled.
[INC ▲]	02CD-750	Memory 02 is recalled.

The contents of a memory will be printed when [START STOP] is pressed.

Example: Recall and Print the memory information.

KEY	DISPLAY	RESULT
INC, M MR, ▲, START STOP	00MAX␣	Memory 00 is drawing.
INC, ▲, START STOP	01CADLINER␣	Memory 01 is drawing.
INC, ▲, START STOP	02CD-750	Memory 02 is drawing.

Example: Recall the memory address by number keys.(00-99)

If you wish to recall the contents of a specific memory address (e. g. memory address 48), press [M MR], then enter the address (e. g. number 4, then 8) in the display. When the 2nd number of the memory address is entered, the corresponding memory appears in the display.

For your convenience, you may use the format (printed Page 37) for your memory information.

KEY	DISPLAY	RESULT
CURSOR CURSOR, M MR, ◀, ◀	◀▶	Monitor mode
4	40	
8	48ABCDEFGHIJKLMN	Memory address 48 (containing the alphabet) has been recalled.

If a memory address contains more than 14 keystokes, the first 14 characters appear in the display. The remainder of the memory may be displayed by repeatedly pressing CURSOR [▶], the earlier characters will move to the left and out of the display to make room for the later characters which will appear, one by one, at the right.

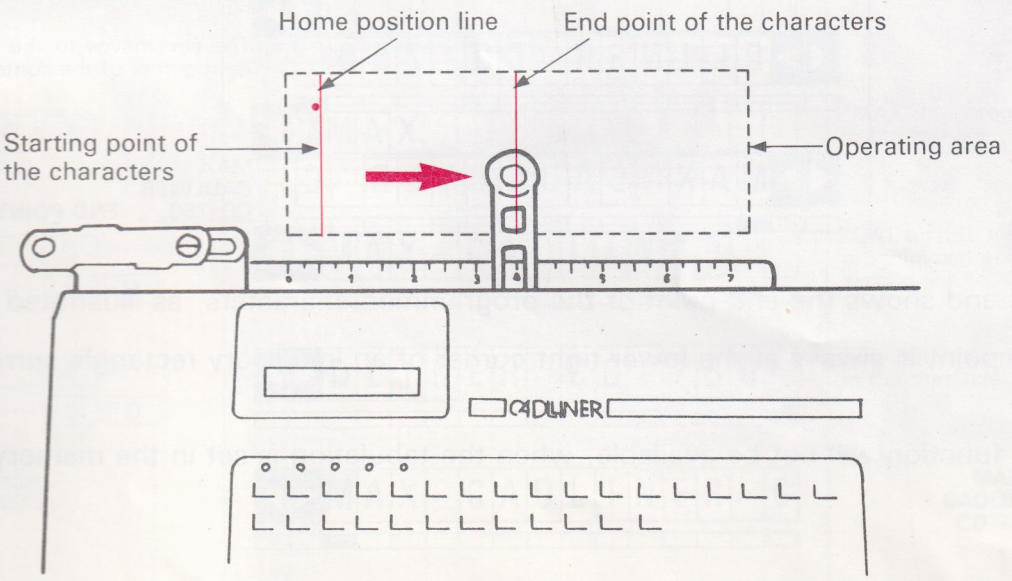
If, when [START STOP] is pressed, the pen is located too far to the right in the operational area, or the contents of the memory can not be printed because the letter size currently selected is too large, a warning buzzer will sound and the memory contents address, that cannot be printed out, will flash in the display.

In such a case, move the pen to the left of the operation area (by [HOME])or change the letter size smaller.

6.3 AUTO END POINT FUNCTION(2nd Function)

This function serves to verify whether the characters programmed in the Monitor or Memory mode can be drawn within the required area. When this function is used, the starting point for the drawing of each line is always at the Home position line.

Note: This function is available only in memory or monitor mode.



Example: End point of "CADLINER" in monitor mode.

KEY	DISPLAY	RESULT
M MR C A ------ ---------- E R	CADLINER	Input characters.
A/END SHIFT A/CTR	CADLINER	Pen moves to the end point of the contents.
START STOP	CADLINER Note: If the END POINT is not where you desire, adjust the position of the unit or change letter size to achieve the proper END POINT. Repeat the END POINT function to verify.	

To cancel Auto END POINT function, press START STOP, M MR, INC ▲, DEC ▼, HOME or SHIFT, then A/END A/CTR. The pen will move to the home position.

Example: End point of the multiple lines.

The AUTO END POINT function will indicates the lower right corner of the contents.

KEY	DISPLAY	RESULT
M MR M A 5 0	DLINER↵CD-750	Input characters.
SHIFT, then A/END A/CTR	DLINER↵CD-750	The pen moves to the lower right corner of the contents.
START STOP	MAX↵CADLINER↵C	MAX CADLINER CD-750 END POINT

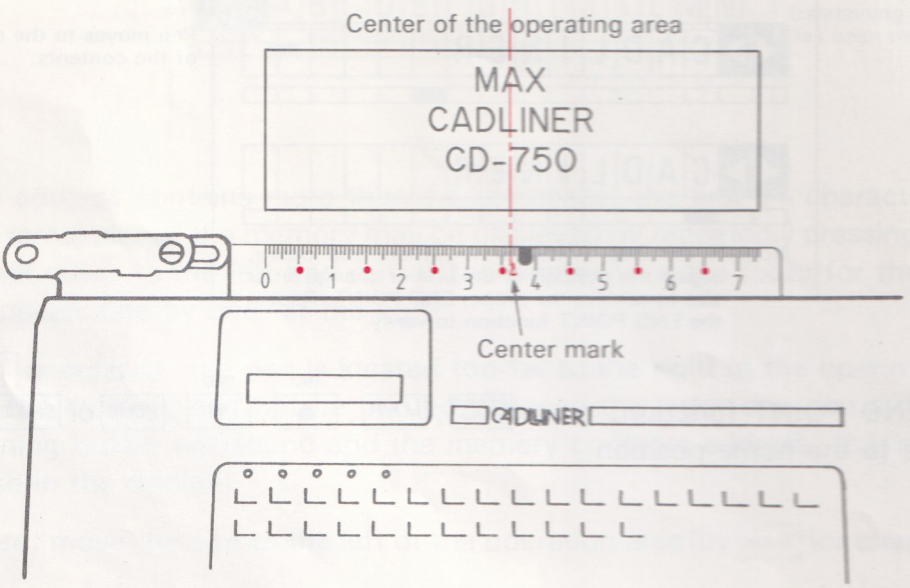
The pen stops and shows the end point of the programmed characters, as illustrated above.

Note: The end point is always at the lower right corner of an imaginary rectangle surrounding the text.

The end point function will not be available, when the tabulation is set in the memory.

6.4 AUTO CENTERING FUNCTION

The AUTO CENTERING function allows the user to align characters to the center point. This function can be used for more than one line if desired. This function is available only in memory or monitor mode.
The scale attached to the unit has a CENTER MARK.



Example: Auto Centering of the multiple lines.

MAX
CADLINER
CD-750

KEY	DISPLAY	RESULT
M MR		
M A X	MAX	"MAX" has programmed in the first line.
↵ C ------ ---------- E R	MAX↵CADLINER	"CADLINER" has programmed in the second line.
↵ C ------ ---------- 5 0	DLINER↵CD-750	"CD-750" has programmed in the third line.
A/CTR START STOP	MAX↵CADLINER↵C	MAX CADLINER CD-750

When finished with AUTO CENTERING function, you may cancel by pressing the A/CTR key again.

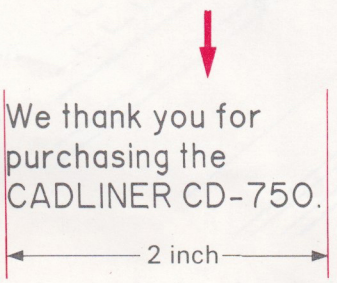
6.5 Auto return

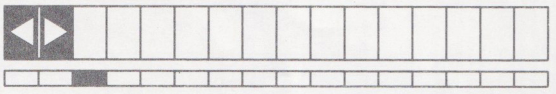
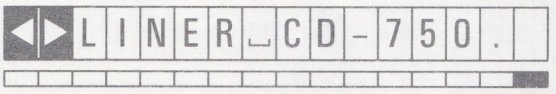
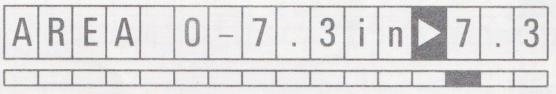
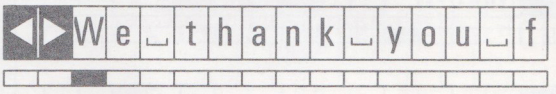
The Auto Return function will initiate the line feed key automatically during the continuous inputting of text, so that the text will fit the proper margin.

Note: This function is available only in monitor or memory mode.

If this function is used on text input in monitor or memory mode, it will automatically fit the text into the appropriate margins.

Example: Input the text in the monitor or memory mode, then set Auto Return into the 2"margin. (We thank you for purchasing the CADLINER CD-750.)



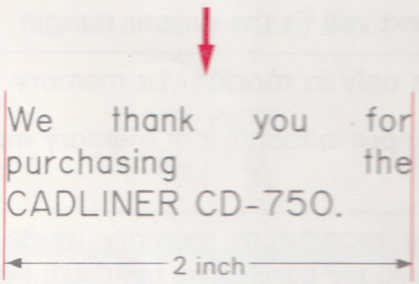
KEY	DISPLAY	RESULT
M MR		Character input.
W LOCK E ------ ------ 5 0 .		
A/RTN		The pen move to the home position.
2 ↵ START STOP		2 inch margin has set.

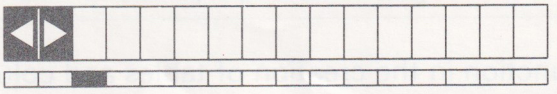
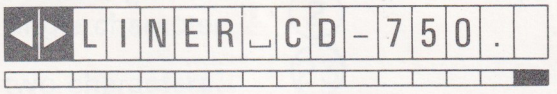
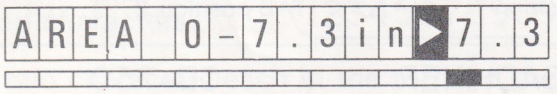
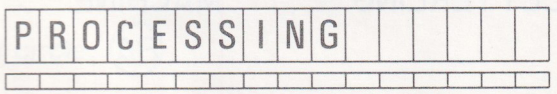
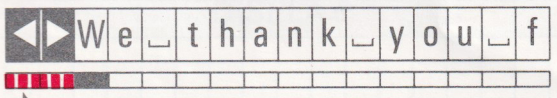
Note: The text for which Auto Return was used remains as edited in the display, i. e. the autoratically set line feeds remain in effect.

6.6 Justification (2nd Function)

This Justify function automatically edits in the same manner as the Auto Return function, so that the text fits within the specified margins. If START STOP is pressed, the Justitication function will cause the text to be printed in justified form.
Note: This function is effective only in monitor mode or memory mode.

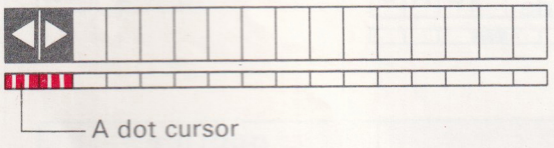
Example:
Input :We thank you for purchasing the CADLINER CD-750.



KEY	DISPLAY	RESULT
SHIFT, M MR		Character input.
W LOCK E ------ ------ 5 0 .		
SHIFT, then A/RTN		The pen moves to the home position.
2 ↵		After couple of seconds, 2inch margin will be set.
START STOP		Editing is prefomed automatically.

Indication that the Justification function is in effect.

The Justification function is indicated by a dot cursor that appears at bottom of the LC display.



A dot cursor

Note: The justificatied information will remain until next justification.

6.7 Pen-Station function (2nd Function)

If, due to a pause during the keying in, the pen point dries, characters will be imperfectly drawn. The PEN STATION function is intended to help prevent this problem.

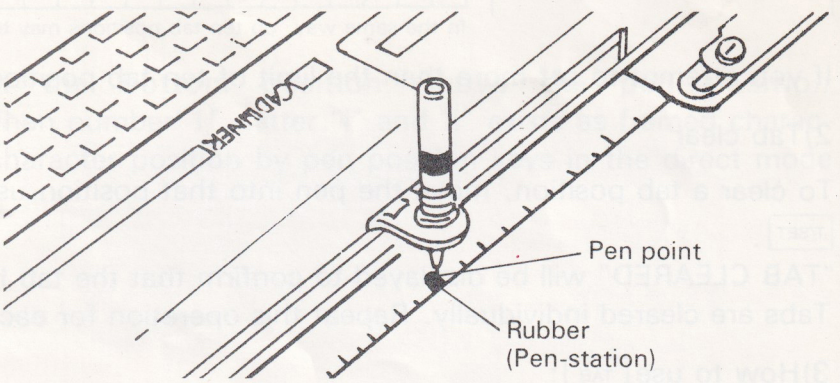
The function is actuated by pressing SHIFT, WAIT HOME. The pen moves to a wait position on the rubber at the center of the scale.

1) SHIFT, WAIT HOME

Move to the pen-station.

2) SHIFT, WAIT HOME again

Move to the previous position for the continuous lettering.

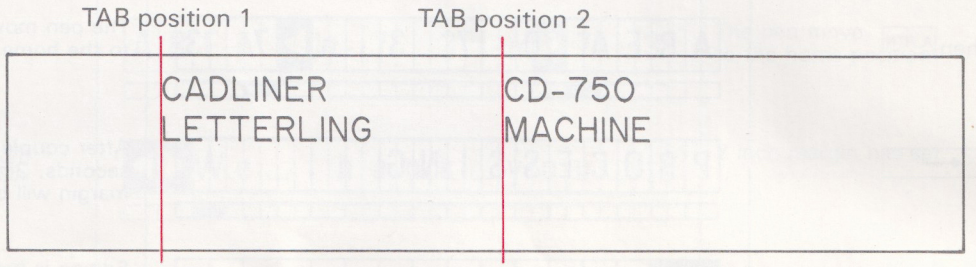


NOTE: When the pen will not be in use for long period of time, please remove it from the pen adapter. The PEN STATION function is effective only for a period of several minutes. Also, the function will not be effective if the rubber holder is dirty with ink. Wipe off the rubber with a clean, wet cloth, if necessary.

7.SPECIAL CAPABILITIES

7.1 Tabulation

Tabulation is a very useful function in the creation of tables and columns, as shown below. Up to ten tabulation positions may be set in the 7.3" drawing area. Pressing [TAB] moves the pen to the next set Tab position.



1)Tabset:

Using the pen move key ([◀], [▶]), move the pen to the desired tab position. Then press [T/SET].

Note: The tabulation may be set only in the direct mode.

Example:Set two Tabulation positions.

KEY	DISPLAY	RESULT
[▶]	Move the pen to the first desired tab-set position by pressing [▶] or [SPACE]	First Tab-position.
[T/SET]	TAB SET 1 The display will appear for 2 seconds to indicate that the first tab position has been set.	Second Tab-position.
[▶] [T/SET]	TAB SET 2 In the same way, up ten tab positions may be set.	

If you attempt to set more than the limit of ten tab positions, a warning buzzer will sound.

2)Tab clear

To clear a tab position, move the pen into that position using the [TAB] key, then press [SHIFT], [T/SET].

"TAB CLEARED" will be displayed to confirm that the tab has been cleared.
Tabs are cleared individually. Repeat this operation for each tabulation position.

3)How to use [TAB]:

When [TAB] is pressed,the pen will move to the next tab setting. If there is no tab setting, the pen will not move and the warning buzzer will sound.

7.2 Frames for lettering (Symbol mode IV)

The following framing operations and symbols are designed for use only with the preset letter spacing.

Examples

①:Circle enclosing single character. (2)

②:Circle enclosing two characters. (23)

⑩:Oval enclosing ten characters. (1234567890)

$\frac{②}{②}$:Circle enclosing two characters each in the top and the bottom position. $\frac{23}{45}$

Example: 2characters in a circle. (AB)

KEY	DISPLAY	RESULT
☀ IV ⑧	○	circle is drawn.
LOCK A B	○ A B	characters "A,B" will be drawn in a circle.

Note: Please do not move the operating unit, these framing symbols are already designed for the certain number of characters.

The following symbols will be drawn in the same operation.

$\frac{234}{567}$ 1234567890 23

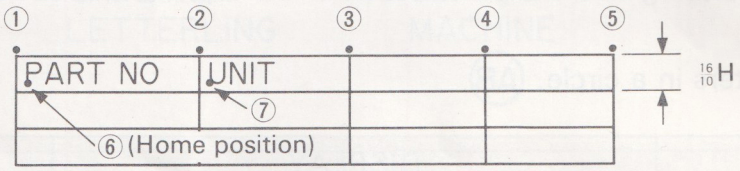
2 23 23 23 23 23 23 23 23 23

Note: To draw characters in the bottom position, move the pen position by ◀ ▶ ▲ ▼. When number"1", letter "l" and "i" exists as framed characters,you may adjust each character position by pen position keys in the direct mode before drawing characters.

7.3 Auto table creation (2nd Function)

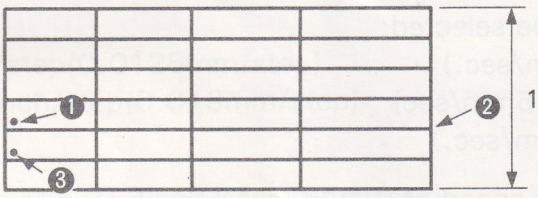
The AUTO TABLE CREATION function facilitates the setting of the format and approrpiate tabs for tables. The table format and tab values for a table may be automatically recalled from memory. If a new format input, the previous format is cleared. Pressing SHIFT , A/TABLE L/SPC will clear previously set tab positions.

Example: 5 column positions and 3 lines.



KEY	DISPLAY	RESULT
SHIFT A/TABLE L/SPC	RECALL (Y/N) If you use previous table format, hit Y If you input new table format, hit N	Move the pen to the upper left to position①.
N ▶ ↵	COLUMN LENGTH 0	Using ▶, move the pen to position②, then enter.
▶ ↵	COLUMN LENGTH 1	Using ▶, move the pen to position③, then enter.
▶ ↵ START STOP	COLUMN LENGTH 4	When you have entered position⑤ press START STOP.
3	LINE ▶ 3	Input number of lines.
↵	PUSH START KEY	
START STOP	DRAWING Lettering within the table.	Drawing the table format. The pen moves to ⑥(home position) when the format is completed.
P A R T SPACE N O	PART␣NO	
CASSETTE TAB U N I T	PART␣NO^{T_b}UNIT	Pen moves to the tab-position.

Example: Larger table format than 1.6"operating area.
1.6"(Limit of the operating area)



The procedure for formatting the upper range of the above table was shown in the last example.

KEY	DISPLAY	RESULT
↵	MARGIN CHECK(◀▶)	Align the upper and lower lines by moving the unit so that the pen position is set to ①.
CURSOR ◀ CURSOR ▶	When the pen is at the bottom of the upper range, pressing ↵ will move the pen to the upper left side. MARGIN CHECK(◀▶)	The pen moves to the right end of the table format. Set the pen position to ② by moving the unit.
START STOP	The pen is moved to the left end of the table format by pressing ◀, and to the right end by pressing ▶. Set the pen positions to ① and ②, by repeating these key operations. DRAWING Lettering within the table.	The lower range of the table format is drawn. The pen then moves to ③(home position).

7.4 LETTERING SPEED (2nd Function)

A standerd pen speed of 1"/sec is automatically selected when the power is turned on. This speed may be reduced in order to obtain characters with a higher degree of blackness.

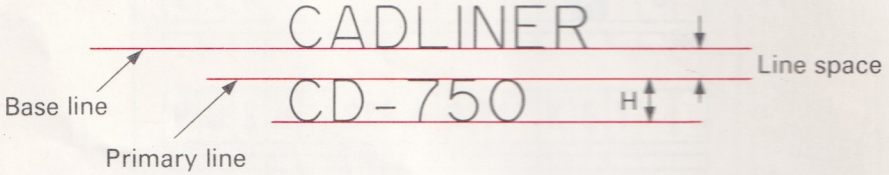
The following pen speeds may be selected:
Pen speed No.3=1"/sec.(25mm/sec.)
No.2=0.5"/sec.(12.5mm/sec)
No.1=0.2"/sec.(5mm/sec.)

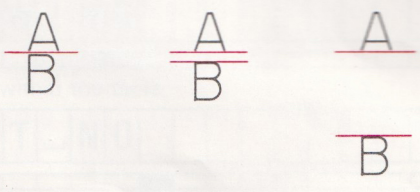
Example: Selection of a drawing speed of 2(0.5"/sec.)

KEY	DISPLAY	RESULT
SPEED SHIFT SIZE	SPEED 1-3 ▶ 3	Current speed is displayed.
2	SPEED 1-3 ▶ 2	New speed 2(0.5"/sec), is selected.
↵		Speed 2 is set.

7.5 LINE SPACE (2nd Function)

The line space is the distance between the base line of the previous line and the new primary line.





Line space 0 ---------2 --------20

Note: When the power is turned on,6/10H is automatically selected.

8. SPECIFICATIONS

Operating area
X axis 7.3inch(185mm) Y axis 1.6inch(40mm)

Step size
Axial directions 0.0005 inch/step(0.0125mm/step)
Diagonal directions 0.0007 inch/step(0.018mm/step)

Lettering speed
Max. 1inch/sec. (25mm/sec) Min. 0.2inch/sec. (5mm/sec)

Drive
Bi-polar half-step drive

Lettering/symboling capacity
Capital letters,Lower case letters, Numerals, Symbols, Circling of characters

Pen
Technical ink pen, Fiber tip pen

Accuracy
±0.3%of travel distance

Character size
0.04inch to 1inch in 0.005inch increments

Battery backed up
100 memory blocks with a total capacity of 5,000 keystrokes

Housing dimensions
(W)13.1" x(D)5.1" x(H)1.5" (332 x130 x39 mm)

Weight(operating unit)
2.17lbs (985g)

Temperature range for operation
41°F to 95°F(5°C to 35°C)

Temperature range for storage
-4°F to 140°F(-20°C to 60°C)

Operating voltage
120V ±10%,60Hz

Power consumption
Approx. 25W(Max.)

9. TROUBLE SHOOTING

The procedures outlined below should be followed in case of a malfunction. Consult your authorized dealer if you cannot locate the source of trouble.

MAX CADLINER fails to operate

Turn power OFF.
Are cables and an AC adapter plugged in properly?
If not, connect then properly.
Turn power ON.
Does CADLINER operate now?
If not, consult your dealer.

Pen arm moves, but does not draw lettering

Is the pen dried up?
Is the distance between the tip of the pen and the drawing surface too far?
If so, adjust the distance to be within 0.04"to0.08"from the drawing surface.

So Poor lettering quality

Is the pen firmly fixed into the pen arm?
If not, screw pen in tightly.

Display indicates "HOME ERROR"

TURN POWER OFF.
Turn power on.
Does the display still show "HOME ERROR"?
If so, consult your dealer.

MEMORY FILE FORMAT

Please make copy, then ues this format for your convenience.

MEMORY ADDRESS	CONTENTS	MEMORY ADDRESS	CONTENTS
00		50	
01		51	
02		52	
03		53	
04		54	
05		55	
06		56	
07		57	
08		58	
09		59	
10		60	
11		61	
12		62	
13		63	
14		64	
15		65	
16		66	
17		67	
18		68	
19		69	
20		70	
21		71	
22		72	
23		73	
24		74	
25		75	
26		76	
27		77	
28		78	
29		79	
30		80	
31		81	
32		82	
33		83	
34		84	
35		85	
36		86	
37		87	
38		88	
39		89	
40		90	
41		91	
42		92	
43		93	
44		94	
45		95	
46		96	
47		97	
48		98	
49		99	

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MAX®

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For additional information and assistance,
contact your local dealer

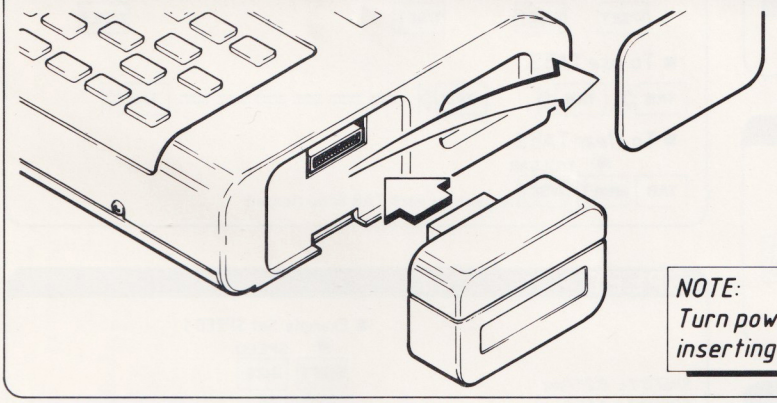
MIM608-EA2

PRINTED IN JAPAN

MAX CADLINER CD-750

QUICK REFERENCE GUIDE

CASSETTE OPERATION



NOTE:
Turn power OFF before inserting or removing a cassette.

■ Cassette program is activated when power is turned on.

■ To use the integrated program:

CASSETTE
SHIFT + TAB

INTERNAL FONT

Integrated program is activated.
(All variable operating parameters are reset to default value)

To return to cassette program:

CASSETTE
SHIFT + TAB

EXTERNAL FONT

MEMORY

MEMORY CAPACITY: 5000
ADDRESSES: 100 (00-99)
MONITOR CAPACITY: 200

Memory addresses in ascending order
INC ▲
CURSOR ◀ *Cursor left* — CURSOR ▶ *Cursor right*
DEC ▼
Memory addresses in descending order

M MR — MEMORY /MONITOR MODE ON. MONITOR ready

INC ▲ — MEMORY address 00 ready

MEMORY STORAGE

■ Storing in MEMORY address 00:

INC
M MR ▲ M A X

00MAX

■ Storing in MEMORY address 58:

CURSORCURSOR
M MR ◀ ◀ 5 8

58

Input desired text or characters.

MEMORY RECALL / PRINT

■ Recall and print MEMORY address 00:

INC
M MR ▲ START STOP

00MAX

MEMORY / MONITOR EDITING

Procedures are identical for memory and monitor modes.

■ Correction by overwriting:

CADLINDR

CURSORCURSOR
◀ ◀ E

■ Correction by inserting:

CADLINR

CURSOR ◀ — INS
SHIFT + DEL
E

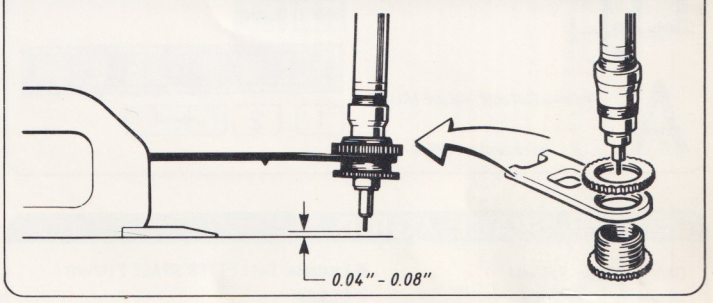
NOTE
To leave INSERT mode, press SHIFT *and* INS *again.*

■ Correction by deleting:

CADLINEER

CURSORCURSOR
◀ ◀ DEL

PEN INSTALLATION



AUTO RETURN

3.5"

Lettering made easy
with the new
CADLINER CD-750

Example: Set right margin of 3.5":

A/RTN

AREA 0-7.3in▶7.3

3 . 5 ↵ START STOP

JUSTIFY

3.5"

Lettering made easy
with the new
CADLINER CD-750

Example: Set column width of 3.5"

JUSTIFY
SHIFT + A/RTN

AREA 0-7.3in▶7.3

3 . 5 ↵ START STOP

AUTO CENTERING

Lettering made easy
with the new
CADLINER CD-750

A/CTR — Pen moves to center of operating area.

◀▶ettering_made

START STOP

END POINT

HOME

Lettering made easy
with the new
CADLINER CD-750

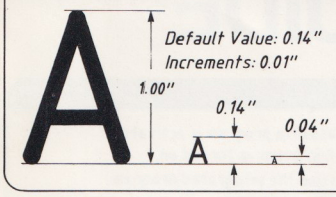
A/END
SHIFT + A/CTR — Pen moves to end point

◀▶ettering_made

START STOP — Pen moves to HOME position and commences writing

MAX CADLINER CD-750

LETTER SIZE



■ Example: Set SIZE 0.5"

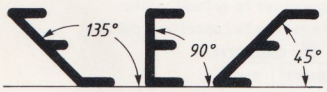
SIZE

SIZE 0.04-1.00 ▶ 0.140

0 . 5 ↵

LETTER SLANT

Default Value: 90°
Increments: 1°



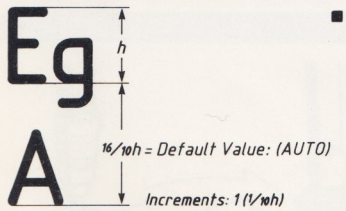
■ Example: Set SLANT 75°

SLANT

SLANT 45-135° ▶ 90

7 5 ↵

LINE SPACE



■ Example: Set LINE SPACE 1.2

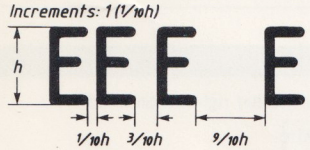
☀ LINE SPC
SHIFT SLANT

LINE 0-20 ▶ 6

1 2 ↵

LETTER SPACE / GRID

Default Value: 3 (3/10h)
Increments: 1 (1/10h)



■ Example: Set LETTER SPACE 2 (2/10h)

L/SPC

LTR (0-9,G) ▶ 3

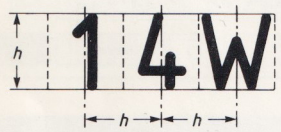
2 ↵

■ Example: Set GRID SPACE

L/SPC

LTR (0-9,G) ▶ 3

G ↵



CONDENSED & EXTENDED LETTERS

Default Value: 100%
Increments: 1%

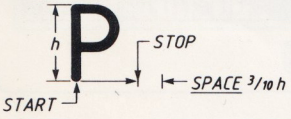
■ Example: Set CONDENSED letters 80%

C&E

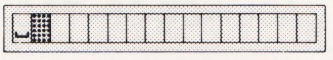
WIDTH 50-200% ▶ 100

8 0 ↵

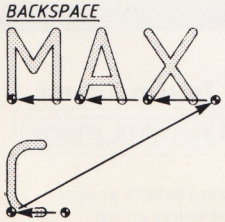
SPACE / BACKSPACE



■ SPACE Pen moves 3/10 h



BACKSPACE

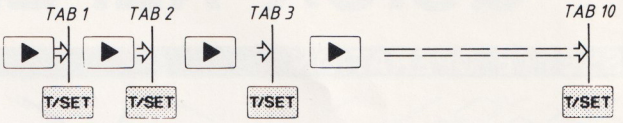


■ BS

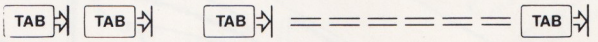
Pen moves back to the starting points of each of the last 20 characters.

TABULATOR

■ To *set* TABS:



■ To *use* TABS:



■ To *clear* TABS:

☀ T/CLEAR
TAB SHIFT T/SET Repeat for each TAB to be cleared.

SPEED

SPEED 1 = 0.2"/sec.
SPEED 2 = 0.5"/sec.
SPEED 3 = 1.0"/sec.

Default Value: 3

■ Example: Set SPEED 1

☀ SPEED
SHIFT SIZE

SPEED 1-3 ▶ 3

1 ↵

AUTOMATIC TABLE

☀ A/TABLE
SHIFT L/SPC

RECALL (Y/N)

N

COLUMN WIDTH 0

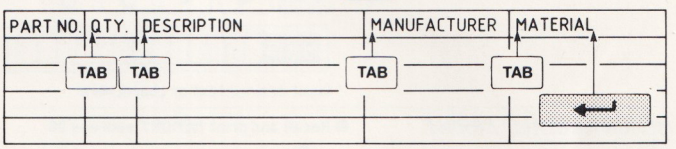
▶ ↵ Repeat for each column (max. 9)

START STOP

LINE ▶ 2

Enter number of lines, e.g. 8 ↵ (max. 99)

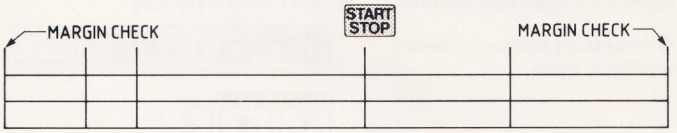
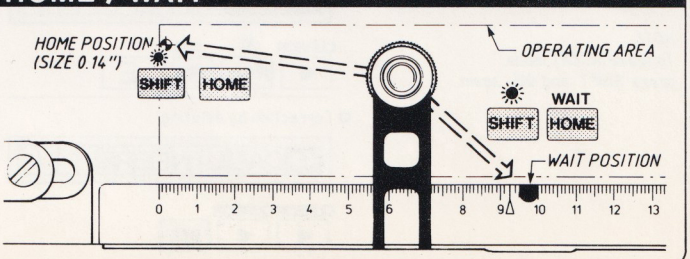
START STOP



Finish lettering in table, then press ↵

MARGIN CHECK (◀▶)

Move CD-750 down, check upper left corner, press ▶ (START STOP), then check upper right corner.



HOME / WAIT